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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/856,657	05/24/2001	Yukihiro Sumida	1035-324	3157
23117 7590 04/22/2004				
NIXON & VANDERHYE, PC 1100 N GLEBE ROAD 8TH FLOOR ARLINGTON, VA 22201-4714			EXAMINER CHOWDHURY, TARIFUR RASHID	
			ART UNIT 2871	PAPER NUMBER
DATE MAILED: 04/22/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/856,657

Applicant(s)

SUMIDA ET AL.

Examiner

Tarifur R Chowdhury

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 72-141, 144, 145 and 148 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 72-93, 97-113, 116, 118, 119, 121-140, 144, 145 and 148 is/are allowed.
- 6) ☒ Claim(s) 94-96, 114, 115, 117, 120 and 141 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 94, 96, 115, 117, 120 and 141 are rejected under 35 U.S.C. 102(b) as being anticipated by Broer et al., (Broer), USPAT 5,729,311.**

3. Broer discloses (col. 5, lines 42-62; col. 7, lines 4-20) and shows in Fig. 1, a lighting system comprising:

- a planar light guiding body (11) having a light incident surface (15) to which light from a light source unit (9) is incident, and an end surface (13) opposing to the light incident surface (15);
- the light source unit (9) disposed on the end surface (13) opposing to the light incident surface (15); and
- converting means (23) such as a reflector disposed on the light incident surface (15), for converting the light from the light source unit into a linearly emitting state by making the light from the light source unit become incident to the light incident surface again,

wherein the planar light guiding body converts light in the linearly emitting state into a planarly emitting state.

Accordingly, claims 94 and 120 are anticipated.

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As to claims 96 and 115, Broer also discloses (col. 1, lines 51-53) that the light source may alternatively be constituted, for example, by one or more light-emitting diodes (LED).

As to claim 117, Broer also discloses that a liquid crystal display comprising the lighting system (col. 5, lines 53-55) and the liquid crystal display element displaying an image by controlling, at each pixel, light outgoing from the light outgoing surface of the planar light guiding body.

As to claim 141, Broer also shows in Fig. 1 that the light incident surface (15) and an end surface (13) opposing the light incident surface are respectively side surfaces of the planar light guiding body (11), the side surfaces respectively having plane directions, which cross a plane direction of a light outgoing surface of the planar light guiding body.

4. Claims 94, 117, 120 and 141 are rejected under 35 U.S.C. 102(E) as being anticipated by Hatazawa et al., (Hatazawa), USPAT 6,239,851.

5. Hatazawa discloses (col. 4, lines 20-24; col. 7, lines 19-26, 45-51) and shows in Fig. 1, a lighting system comprising:

- a planar light guiding body (4) having a light incident surface (4c) to which light from a light source unit (5) is incident, and an end surface (4b) opposing to the light incident surface (4c);
- the light source unit (5) disposed on the end surface (4b) opposing to the light incident surface (4c); and
- converting means (8a) such as a reflector disposed on the light incident

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surface (4c), for converting the light from the light source unit into a linearly emitting state by making the light from the light source unit become incident to the light incident surface again,

wherein the planar light guiding body converts light in the linearly emitting state into a planarly emitting state.

Accordingly, claims 94 and 120 are anticipated.

As to claim 117, Hatazawa also discloses that a liquid crystal display comprising the lighting system (col. 1, lines 13-15) and the liquid crystal display element displaying an image by controlling, at each pixel, light outgoing from the light outgoing surface of the planar light guiding body.

As to claim 141, Hatazawa also shows in Fig. 1 that the light incident surface (4c) and an end surface (4b) opposing the light incident surface are respectively side surfaces of the planar light guiding body (4), the side surfaces respectively having plane directions, which cross a plane direction of a light outgoing surface of the planar light guiding body.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

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the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 96 and 115 are rejected under 35 U.S.C 103(a) as being unpatentable over Hatazawa as applied to claims 94, 117, 120 and 141 above.

9. Hatazawa does not explicitly disclose that the light source unit is composed of LED element. However, using LED element as light source is common and known in the art and thus would have been obvious to obtain a light source providing several advantages such as has high directivity.

10. Claims 95 and 114 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatazawa as applied to claims 94, 117, 120 and 141 above and in view of Takeshi et al., (Takeshi), JP 09-160032.

11. Hatazawa differs from the claimed invention because he does not explicitly disclose that the converting means is a diffusing means.

Takeshi discloses a linear light guiding body (22) that is surrounded by a diffusing sheet (30) (Fig. 7). Takeshi also discloses that the diffusing sheet helps to obtain nearly uniform illumination all over the light transmitting part (abstract).

Takeshi is evidence that ordinary workers in the art of liquid crystal would find a

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reason, suggestion or motivation to modify the converting means of Hatazawa into a diffusing means by employing a diffusing sheet around the linear light guiding body so that nearly uniform illumination all over the light transmitting part is obtained, as per the teachings of Takeshi.

Accordingly, claims 95 and 114 would have been obvious.

12. Claims 95 and 114 are rejected under 35 U.S.C. 103(a) as being unpatentable over Broer as applied to claims 94, 96, 115, 117, 120 and 141 above and in view of Takeshi et al., (Takeshi), JP 09-160032.

Broer differs from the claimed invention because he does not explicitly disclose that the converting means is a diffusing means.

Takeshi discloses a linear light guiding body (22) that is surrounded by a diffusing sheet (30) (Fig. 7). Takeshi also discloses that the diffusing sheet helps to obtain nearly uniform illumination all over the light transmitting part (abstract).

Takeshi is evidence that ordinary workers in the art of liquid crystal would find a reason, suggestion or motivation to modify the converting means of Broer into a diffusing means by employing a diffusing sheet around the linear light guiding body so that nearly uniform illumination all over the light transmitting part is obtained, as per the teachings of Takeshi.

Accordingly, claims 95 and 114 would have been obvious

Allowable Subject Matter

13. Claims 72-93, 97-113, 116, 118, 119, 121-141, 144, 145 and 148 are allowed.

Response to Arguments

14. Applicant's arguments with respect to claims 94-96, 114, 115, 117, 120, 141, 143, 146 and 147 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

15. a) USPAT 5,099,343 discloses a lighting apparatus wherein a light source and a converting means are disposed on both side ends of the light guide.

b) USPAT 5,764,322 discloses a light guiding sheet wherein a light source is disposed on an end surface of the light guide and a converting means is disposed on the light incident side of the light guide.

c) USPAT 6,086,212 discloses a panel light source device through which the light availability is increased.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tarifur R Chowdhury whose telephone number is (571) 272-2287. The examiner can normally be reached on M-Th (6:30-5:00) Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TRC
April 13, 2004


TARIFUR R. CHOWDHURY
PRIMARY EXAMINER